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Requested Patent: GB2112752A

Title: CARTONS ;

Abstracted Patent: GB2112752 ;

Publication Date: 1983-07-27 ;

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Application Number: GB19820035266 19821210 ;

Priority Number(s):

GB19820035266 19821210; GB19820000411 19820107; GB19820003595
19820208; GB19820016182 19820603 ;

IPC Classification: B65D5/44 ;

Equivalents: ;

ABSTRACT:

A carton or tray having at least one open face and folded from a card or fibre material blank is strengthened by one or more strips 18,19, preferably of extruded plastics material. The blank is folded about lines 16 and 17 to form a tray with upstanding ends 11,12, and flaps 13,15 the top ends of which are joined by plastics extruded strips 18,19 which are formed with a generally U-shaped cross section for engagement with the top edge regions of the flaps 13,15.

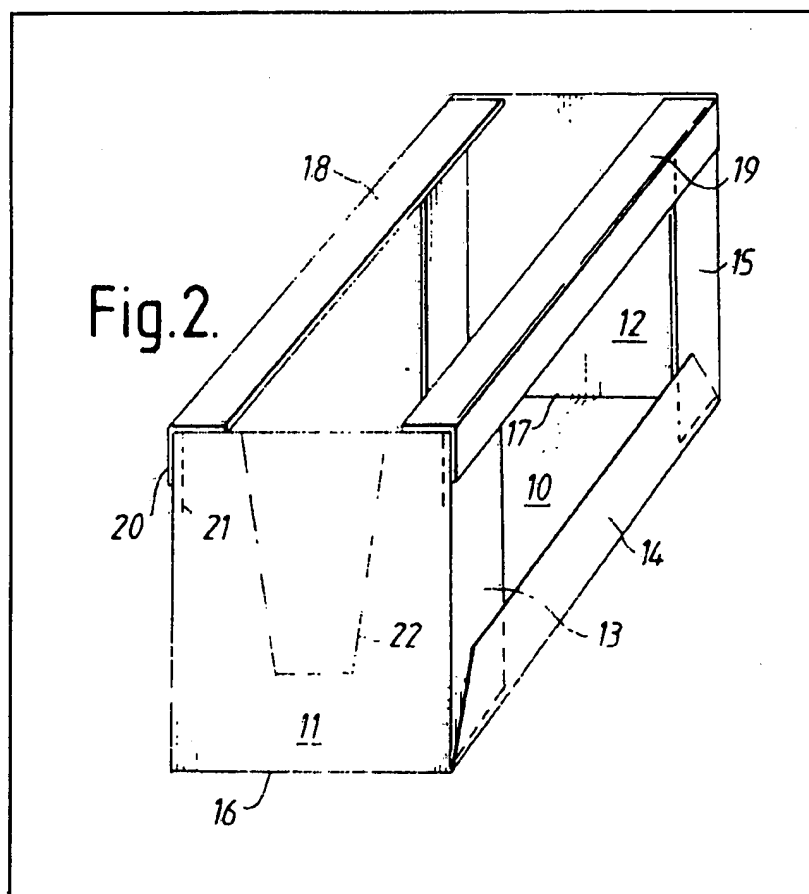
(12) UK Patent Application (19) GB (11) 2 112 752 A

- (21) Application No 8235266
(22) Date of filing 10 Dec 1982
(30) Priority data
(31) 8200411
8203595
8216182
(32) 7 Jan 1982
8 Feb 1982
3 Jun 1982
(33) United Kingdom (GB)
(43) Application published
27 Jul 1983
(51) INT CL³
B65D 5/44
(52) Domestic classification
B8P J Q
(56) Documents cited
GB A 2069464
GB 1526346
GB 1304148
US 3760465
(58) Field of search
B8P
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(54) Cartons

(57) A carton or tray having at least one open face and folded from a card or fibre material blank is strengthened by one or more strips 18,19, preferably of extruded plastics material.

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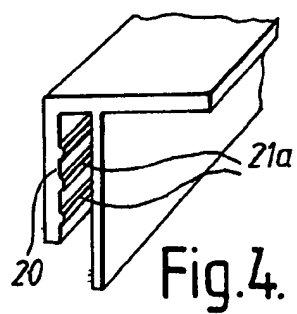
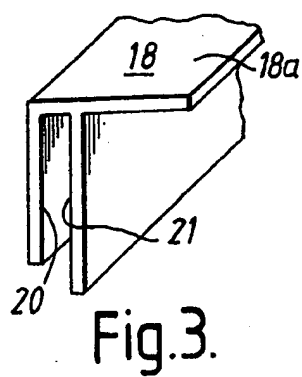
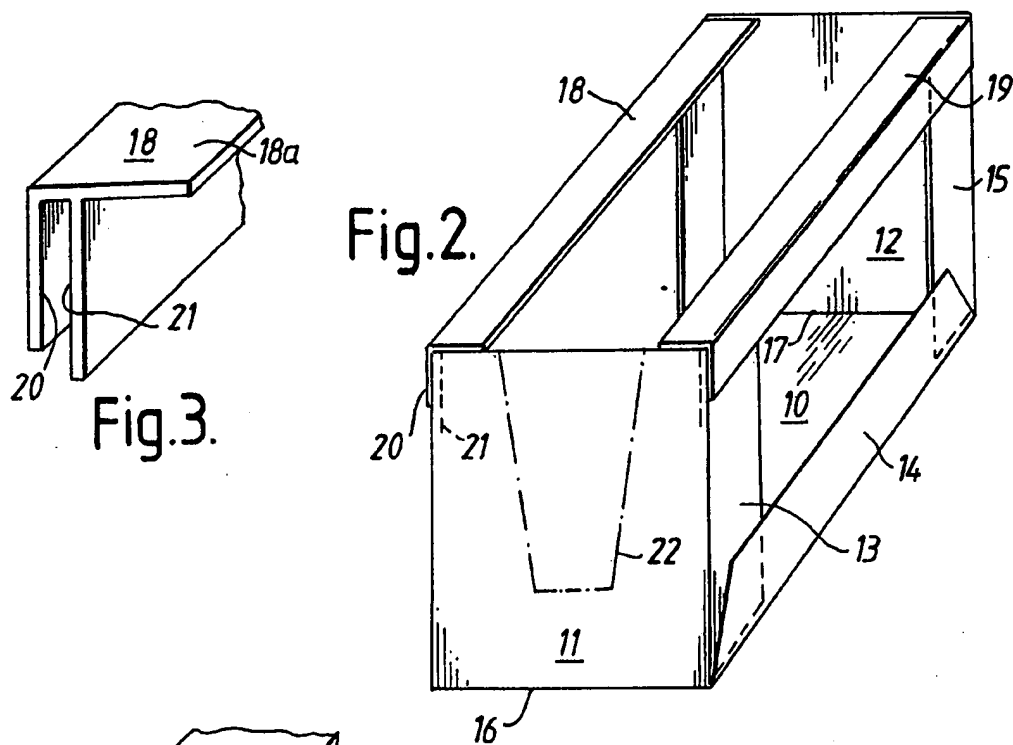
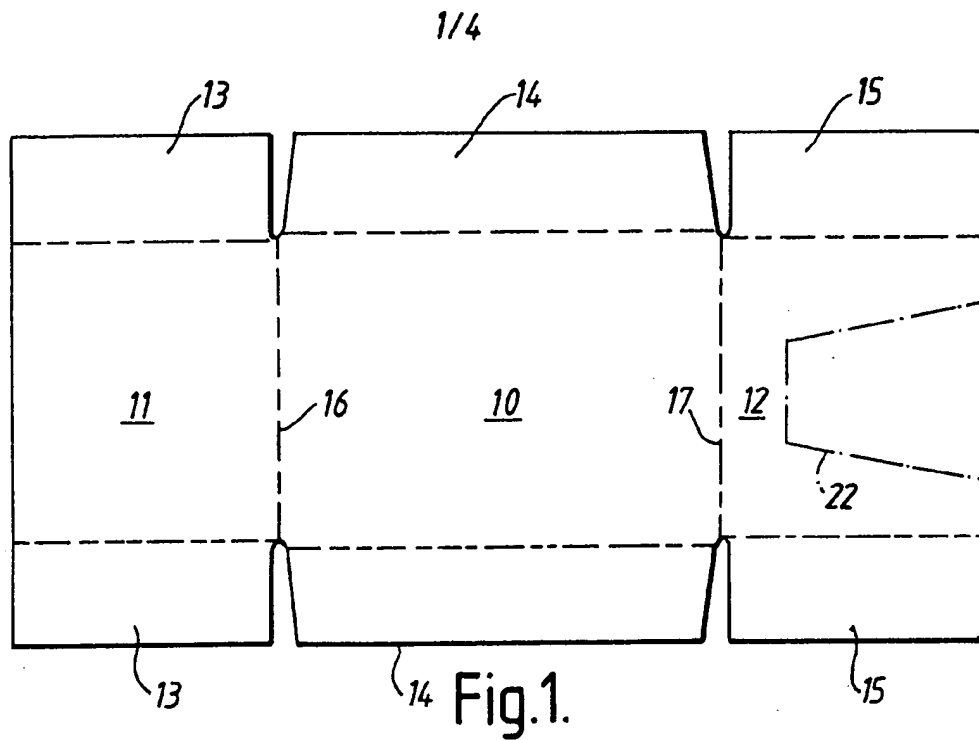


Fig.5.

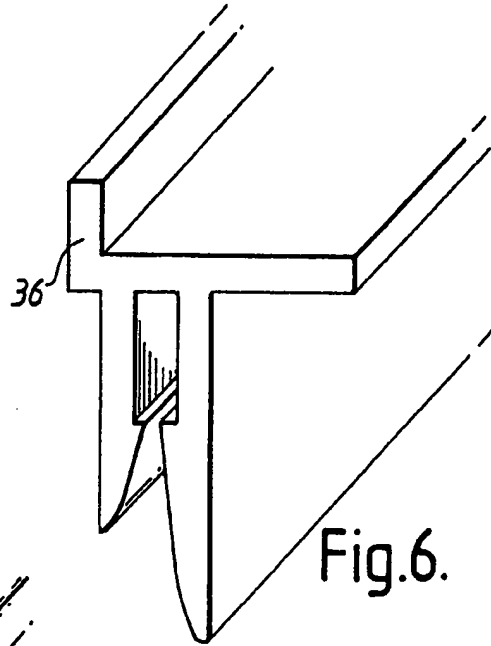
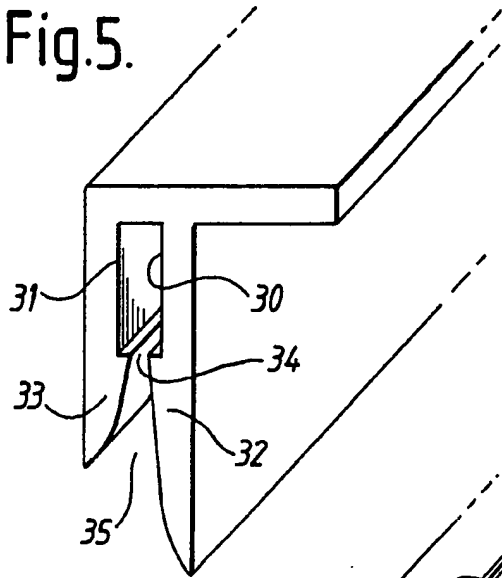


Fig.6.

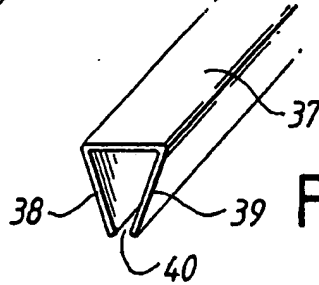


Fig.7.

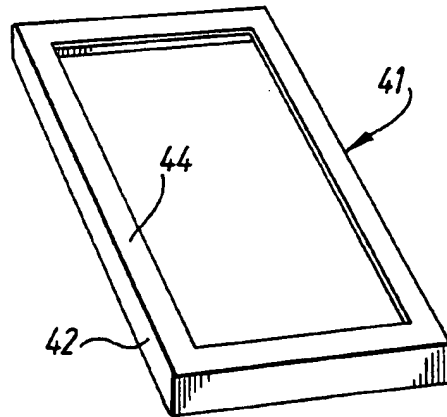


Fig.8.

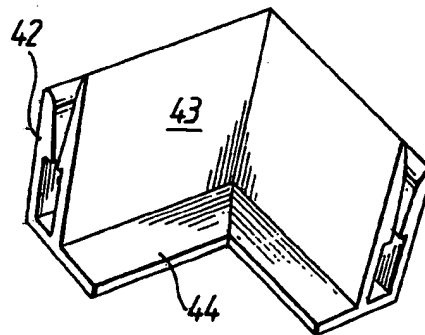


Fig.9.

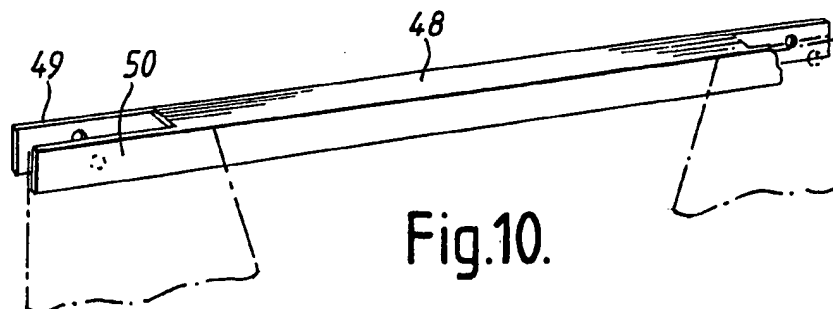


Fig.10.

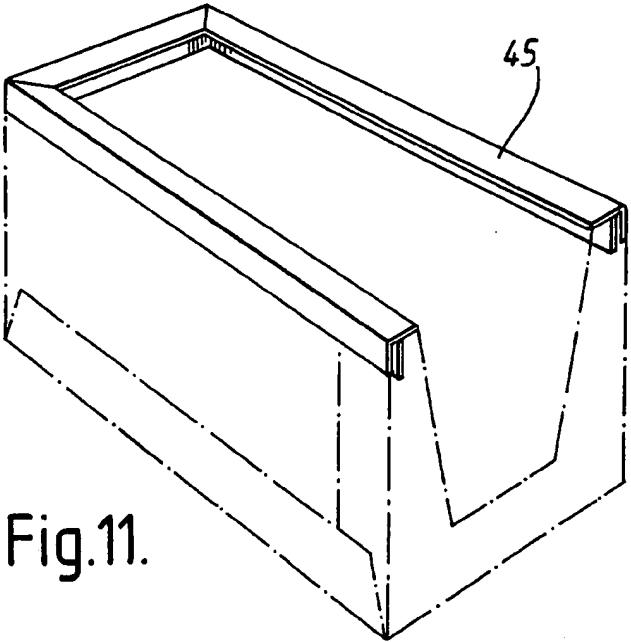


Fig.11.

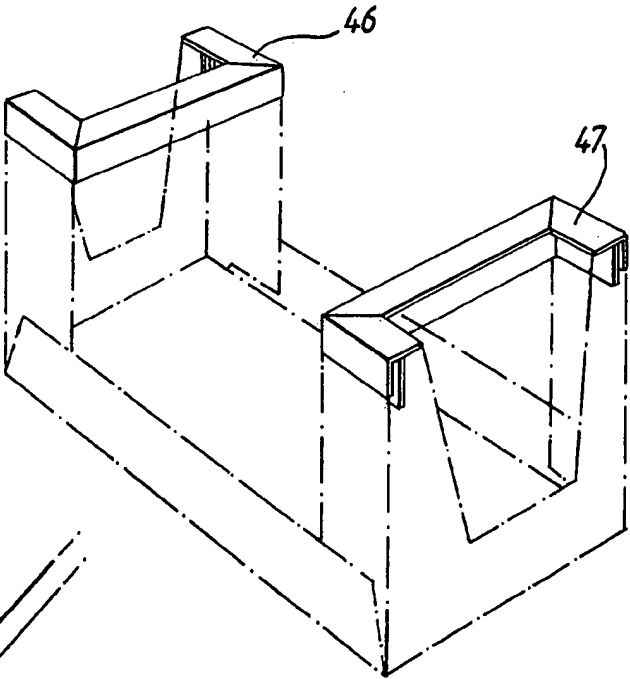


Fig.12.

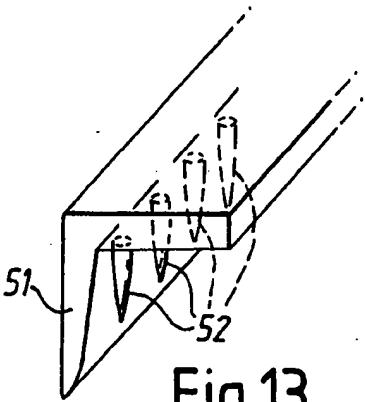


Fig.13.

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Fig.14.

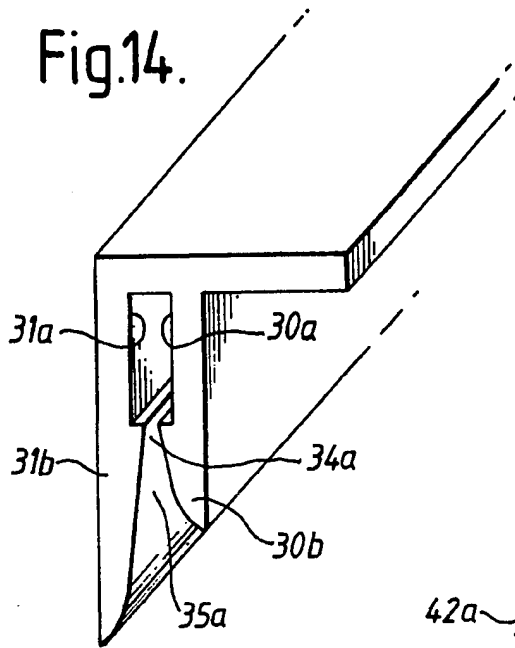


Fig.16.

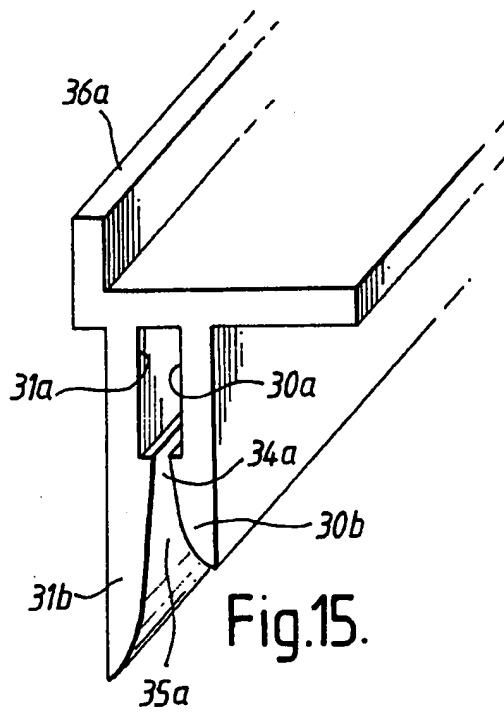
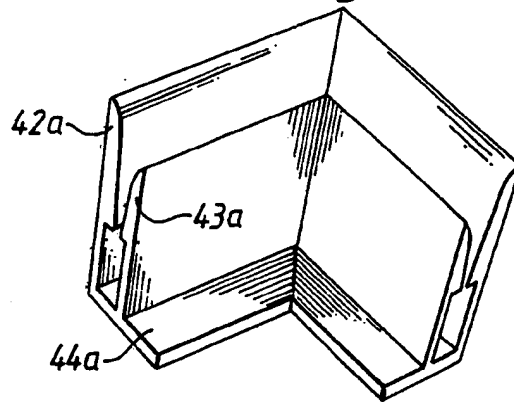


Fig.15.

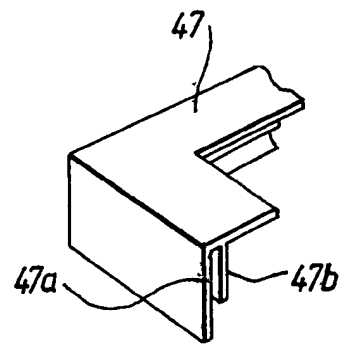


Fig.17.

SPECIFICATION

Packaging

- 5 This invention relates to a carton or tray of the type which has at least one open face and may be used for packaging and/or displaying goods.
- Such cartons are known and are usually made of corrugated cardboard or fibre material.
- 10 An object of the invention is to provide a tray or carton which can be of relatively thin or weak cardboard or fibre material and which is strengthened by one or more plastic strips which join end panels of the tray or carton.
- 15 In accordance with the present invention, there is a carton or tray comprising a base with two upstanding end panels and at least one open side, the carton or tray being formed of folded card or fibrous material and being strengthened and supported by
- 20 one or more strips joining the free ends of the end panels, the strips having parallel clamping faces adapted to fit over respective internal edges or flaps on the end panels.
- Preferably, the strips are extruded strips.
- 25 Also, preferably, the extruded strips are longitudinally corrugated along at least one internal parallel clamping face.
- In a preferred arrangement, the tray or carton has three open sides and is formed from a corrugated or
- 30 other fibrous tray blank folded and joined together by, for example, gluing or stapling, to form the base and upstanding end panels, the assembly being completed by the addition of a pair of parallel strips adapted to clamp over the free parallel upper edges
- 35 of returned edge flaps of the end panels.
- There are preferably at least two open faces so as to provide, in use, at least an open top and an open side display panel. The tray may be left open or it may be completed in conventional fashion by use of
- 40 wrappings or windows of Cellophane (Reg. Trade Mark) or by plastic sheeting or the type known as Clingfilm (Reg. Trade Mark) or similar material.
- At least one end panel may be provided with a perforated removable flap to display the tray contents.
- 45 From another aspect, the invention comprises a kit of parts for making a carton or tray comprising a preformed blank providing a base and two end panels, the base and end panels having flaps along
- 50 at least two edges and a pair of clamping strips adapted, when the carton or tray is assembled, to grip opposite end panel flaps at the free ends of the panels so as to strengthen the carton or tray.
- Although the strips are preferably extruded they
- 55 may be moulded, but they are preferably made of plastics material.
- Other materials may be used in place of the plastics for these strips such as extruded aluminium or other metals, wood moldings, or composites such
- 60 as pressed fibrous material.
- The plastic or other strips joining the free ends of the panels may have their parallel clamping faces arranged in the form of two legs one of which is longer than the other. The inner leg may be longer
- 65 than the outer leg, but preferably the outer leg is

longer than the inner leg.

Each of the legs may be in the form of a parallel sided section followed by a wider section which may taper to a point so that the wider sections on each of the two legs form between them a narrow throat or clamping area.

In the accompanying drawings:

Figure 1 is a plan view of a corrugated or fibrous material tray blank;

75 *Figure 2* is an end view of the assembled tray or carton;

Figure 3 shows a portion of an extruded plastics strip;

80 *Figure 4* shows an alternative form of plastics strip;

Figure 5 is a section through an alternative plastic or metal strip;

Figure 6 is a section through a further alternative plastic or metal strip;

85 *Figure 7* is an alternative form of plastic or metal strip;

Figure 8 is a rectangular framework made up of a number of plastic strips molded as a unitary construction or formed by joining a number of extruded

90 strips;

Figure 9 is an inverted view of one corner of the frame shown in *Figure 8*;

95 *Figure 10* shows an alternative arrangement of fixing the plastic strips to the fibreboard or corrugated fibreboard using press-stud type clips on either side of the end of the runner to lock through holes diecut in the tray;

Figure 11 shows the use of a U-shaped formation of the molded or extruded strips,

100 *Figure 12* shows the use of two U-shaped composite extruded or molded strips;

Figure 13 shows an angled plastic strip or runner with molded comb teeth to press down into fluting to position the strip on the corrugated board;

105 *Figure 14* is a modification of *Figure 5*; and

Figures 15, 16 and 17 are respectively modifications of *Figures 6, 9 and a portion of Figure 12*.

As can be seen in *Figure 1*, the blank comprises a base portion 10 and two end panel portions 11 and 12 all of which are provided with flaps 13, 14 and 15. The tray blank can be folded about lines 16 and 17 and the flaps 13 and 15 joined to the flap 14 so as to form an open sided tray with an open top as shown in *Figure 2*. A perforated flap 22 may be provided to

115 enable the contents to be exposed to view.

The flaps are joined to each other by gluing or stapling and then the tray is completed by addition of two extruded plastic strips or runners 18 and 19 which clamp over the free upper ends of flaps 13 and

120 15.

Two forms of the extruded plastics strips are shown in Figures 3 and 4. The strip in Figure 3 has a pair of parallel clamping faces 20 and 21 joined by a top platform 22. In Figure 4 the face 20 is longitudinally corrugated at 21a to provide additional strength

125 and to assist in clamping the edge of the carton.

Thus, the plastic strips or runners 18, 19 fit over flaps 13 and 15 which form the end side walls of end panels 11, 12 and bridge the gap between them so as to provide bracing. The strips 18, 19 also act as

platforms for stacking and give stacking strength by spreading the load applied by stacked trays either in column or cross-stacking arrangement. Further advantages are:-

- 5 a) giving better support for the shrink film or other wrapping material;
- b) gives easier access to the tops of the trays or cartons for price marking;
- c) gives greater visibility for the contents;
- 10 d) facilitates cross- or brick-stacking, and
- e) prevents top of one tray cutting into base of tray above.

The invention is particularly applicable to machine erected trays, but may also be applied to display

- 15 cartons and so-called sachets.
- If an additional carton wall is provided one of the strips 18 or 19 may be omitted.

In the embodiment of the extruded plastic strip shown in Figure 5 the parallel clamping faces 30 and 20 31 have enlarged extensions 32 and 33 forming between them a throat 34 with a divergent channel 35. With this arrangement the throat 34 and divergent channel 35 enable the strips to be pressed onto the cardboard flaps attached to the ends of the

- 25 carton and the portions 32, 33 are forced apart so as to provide a resilient gripping action to hold the strip onto the cardboard.
- In Figure 6 the arrangement is similar except that there is a ledge 36 provided along one side of the

- 30 strip to assist in stacking and holding cartons or sachets one upon the other.
- The strip shown in Figure 7 is of a type sometimes used as a binder which has a flat platform top 37 and two resilient angled sides 38 and 39. The sides 38 and 39 form between them a throat 40 which grips the corrugated board when the strip is attached to the carton.

The resilient strips described in this specification and in the previous specification may be united into a single rectangular frame such as is shown in Figure 8 either by molding a single frame or by joining a

- 40 number of extruded strips.
- The rectangular frame may be made up of strips of any of the shapes previously described. One particular preferred form of frame is shown illustrated in Figure 9 which is an inverted view of one corner of the frame shown in Figure 8. It will be seen that the whole frame has a pair of parallel clamping molded faces 42 and 43, shaped like those shown in Figures

- 50 5 and 6, which are joined by a platform 44.
- In Figure 11 is shown another arrangement in which the plastic strips are joined to form a U-shaped strip which may be any of the configurations previously described. The U-shaped strip 45 has

- 55 internal clamping faces which engage the flaps and portions of the end faces of the carton as shown in Figure 11.
- Figure 12 shows another arrangement in which two U-shaped composite plastic strips 46 and 47 are used to engage the respective ends of the carton. Providing the gap between these two U-shaped members is not too great the carton will provide support for a further carton stacked above it.

In Figure 10 the molded plastic strip 48 has open

clips on either end of the plastic tray to lock through appropriate holes diecut in the tray.

- In Figure 13 an alternative form of molded plastic strip is shown which has an end face 51 and a
- 70 number of dependent "comb" teeth spaced from the end face so that the corrugated board is gripped between the teeth 52 and the end face 51.

Although the preferred strips described in this specification are made of plastics material, and it is believed that plastic is the best material to use because it is light, cheap and easily molded or extruded, other materials such as metals, fibre moldings, fibre board and even wood moldings may be used.

- 80 The completed tray with appropriate produce in it may, if desired, be shrink wrapped with clear plastic sheeting.

In the arrangement shown in Figure 14 the extruded plastic strip has parallel clamping faces 30a and 31a with wider extensions 30b and 31b forming between them a throat 34a diverging into a channel 35a. The arrangement in Figure 15 is similar to that in Figure 14 except that a ledge 36a is provided on one side of the strip to assist in stacking and holding

- 90 cartons or sachets one upon the other. In Figure 15 the clamping faces 30a and 31a, extensions 30b and 31b, throat 34a and diverging portion 35a are all similar to those shown in Figure 14.
- In Figure 16 one corner of a frame is shown which has two parallel clamping molded faces 42a and 43a joined by a platform 44a. It will be seen that the outer clamping face of leg 42a is longer than the inner clamping face or leg 43a.

- Figure 17 shows one corner of the plastic strip 47 shown in Figure 12 and it will be seen that the legs 47a and 47b have been reversed so that the longer leg 47a is on the outside of the strip and the shorter leg 47b on the inside of the strip.

105 CLAIMS

1. A carton or tray comprising a base with two upstanding end panels and at least one open side, the carton or tray being formed of folded card or fibrous material and being strengthened and supported by one or more strips joining the free ends of the end panels, the strips having parallel clamping faces adapted to fit over respective internal edges or flaps on the end panels.

- 115 2. A carton or tray according to claim 1 and in which the strips are extruded or molded strips.

3. A carton or tray according to claim 1 or claim 2 in which the strips are of plastics material.

4. A carton or tray according to any preceding claim and in which the extruded or molded strips are longitudinally corrugated along at least one internal parallel clamping face.

5. A tray or carton which has three open sides and is formed from a corrugated or other fibrous tray blank folded and joined together to form the base and upstanding end panels, the assembly being completed by the addition of a pair of parallel strips adapted to clamp over the free parallel upper edges of intumed edge flaps of the end panels.

- 120 6. A carton or tray according to any of claims 1 to

5 in which there are at least two open faces so as to provide, in use, at least an open top and an open side display panel.

7. A tray as claimed in any of claims 1 to 5 completed by use of wrappings or windows of Cellophane (Reg. Trade Mark) or by transparent plastic sheeting, or similar material.

8. A tray according to any preceding claim and in which at least one end panel is provided with a perforated removable flap to display the tray contents.

9. A tray according to any preceding claim and in which said strips are made of extruded aluminium or other metal, wood moldings, or composites such as pressed fibrous material.

10. A carton according to any of claims 1 to 8 in which the plastic or other strips joining the free ends of the panels have their parallel clamping faces arranged in the form of two legs one of which is longer than the other.

11. A carton according to claim 10 and in which the outer leg is longer than the inner leg.

12. A carton according to claim 10 or claim 11 and in which each of the legs is in the form of a parallel sided section followed by a wider section which may taper to a point so that the wider sections on each of the two legs form between them a narrow throat or clamping area.

13. A kit of parts for making a carton or tray comprising a pre-formed blank providing a base and two end panels, the base and end panels having flaps along at least two edges and a pair of clamping strips adapted, when the carton or tray is assembled, to grip opposite end panel flaps at the free ends of the panels so as to strengthen the carton or tray.

14. A carton or tray substantially as hereinbefore particularly described and as illustrated in the accompanying drawings.